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THE VERMONT WAY FORWARD: THE NATION'S FIRST E-STATE

And Creation of the Vermont Telecommunications Authority

I propose that by 2010, Vermont be the nation's first true "e-state"—the first state to provide universal cellular and broadband coverage everywhere and anywhere within its borders. When you turn on your laptop, you're connected. When you hit the send button on your cell phone, the call goes through.... This goal is within our grasp if we move quickly and decisively during this legislative session.

Unlike building more roads or bigger buildings to support growth, the commercial infrastructure of tomorrow will be almost invisible, but for a handful of towers and antennas.

Governor Jim Douglas, Inaugural Address, January 4, 2007

EXECUTIVE SUMMARY

Governor Douglas is proposing that by 2010, Vermont transform itself into the nation's first true "*e-state*".

Building on his previous broadband and cellular goals, Governor Douglas has forged a bold vision for Vermont. His *e-state* proposal will ensure universal access to broadband Internet and cellular phone service, and allow Vermonters to work in a 21st Century marketplace while availing themselves of the finest environment to live and raise families.

A state-of-the-art telecommunications system is essential to economic development, job creation and everyday life. Vermonters must have access to high-speed Internet connections and universal cell phone coverage to remain competitive. Vermont must take bold steps now to ensure that the necessary investment in technology occurs at a pace that allows us to not just remain competitive, but to take a full step ahead of the competition.

Positioning Vermont as an *e-state* is Vermont's opportunity to move a step ahead in today's economy by completing a technological transformation that no other state has achieved.

Given Vermont's rural nature, achieving Governor Douglas' *e-state* vision will require a departure from the traditional mode of development. Full deployment of a statewide network – in a timeframe necessary to ensure Vermont remains competitive – requires a public-private partnership with the resources and expertise to spur the infrastructure investment we require. That is why the formation of the Vermont Telecommunications Authority is crucial.

The Authority will be empowered with financial backing from the State in the form of moral obligation bonds and be charged with completing this technological transformation. Benefiting from the best of both sectors, the Authority will work to facilitate, finance, and support the development activities of the carriers who will serve Vermonters.

By 2010, Vermont can be the nation's first e-state -- the first state to provide universal cellular and broadband coverage everywhere and anywhere within its borders.

WHY IS THIS SO IMPORTANT?

While many Vermonters understand the need for these services, it is important to explain in detail exactly what is at stake. The world's economy has changed over the past decade and Vermonters now compete for opportunities in a global, knowledge-based economy. We need to capitalize on this opportunity instead of becoming a victim of it.

Vermont can become a hub for the world's most advanced software, engineering and environmental technologies entrepreneurs. These entrepreneurs will form companies big and small that will be able to locate across the state and have high capacity broadband as well as ubiquitous wireless services. The growing trend in Vermont to work at home will grow substantially, as Vermonters throughout the state will be able to work for companies across the globe via their new connections. These new businesses and employment opportunities will drive our economy and create new revenues for our state. Our young people and college graduates will recognize and capitalize on the realization that Vermont now has outstanding income potential, along with the highest quality of living in the world.

The education of our children is the single most important and lasting impact of our "e-state" initiative. Affordable broadband services provide every child with access to the educational resources of the best schools and libraries throughout the world, as well as offering continuing education opportunities for lifelong learners.

Teachers and students would have at their fingertips a world's worth of educational resources. Whether it's online classes, tutorials to supplement classroom learning or internet video links with other classrooms throughout the world, our network will firmly establish Vermont as the best place to live and raise a family.

As our medical cost continues to rise, we all must take responsibility for proactively managing our health. The emergence of telemedicine, made possible by our universal broadband network, will offer monitoring services to our chronically ill patients and our elderly. A person with a chronic condition, such as diabetes, will be able to transmit their glucose test instantly to their doctors, who can respond to anomalies or alarming trends. Patients will also have access to sites like WebMD and other sites that can provide education on healthy lifestyles.

Vermont is fast becoming a leader in Healthcare innovation, lead by VITL and the Blueprint for Health. While our best-in-nation broadband network can never replace the compassionate touch of our health care providers, it will provide them with the most modern tools available to improve health care quality and reduce cost. The Authority will be an eligible entity to apply for the Federal (FCC and USDA) telemedicine programs.

Vermont communities will be reinforced by the connectedness provide with the universal broadband network, from the streaming of select board meetings to high school sporting events. Citizens will be able to closely review town budgets, ballots and information. Vermonters that take advantage of new work at home jobs will no longer have to commute to Chittenden County, reducing fuel consumption and allowing more time for civic involvement. Ubiquitous, high-speed access will create communities of local interest to discuss issues, offer solutions and implement innovative ideas. The Authority will be able to work with communities in order to access the Federal, Community Development Block Grant program.

Finally, ever-present cellular coverage will give residents and visitors an extra measure of protection and provide a communications network where police officers of one town can talk to firefighters of another.

VERMONT TELECOMMUNICATIONS AUTHORITY

The Authority is designed with three guiding principles: (1) commitment to providing the most advanced services to all Vermonters; (2) taking action to complement private sector investments; and (3) creating a sustainable model that will continue to keep Vermont on the leading edge of these services.

The Authority will be empowered financially, with bonding and traditional loan resources and with the assets of the state such as, rights of way, lands, towers and buildings.

The Authority will solicit proposals from partners who are willing to provide telecommunications services and build telecommunications infrastructure and investors who will work with the state to leverage the state's contribution. The initial focus will be on delivering broadband services to currently underserved, rural areas and to deploy wireless services throughout these areas.

HOW FAR DO WE HAVE TO GO?

As of early 2006, broadband was available to approximately 84% of Vermonters by population. This figure is currently being update to include new deployment, but we anticipate it will be nearly 90%.

The final 10% of Vermonters will be the most difficult to reach. Major broadband providers have said they will not reach everyone and small start-up broadband providers are expanding service, but at a limited pace. Vermonters experience the implications of the lack of broadband in many ways. Homes without broadband are more difficult to sell; businesses must live with the uncertainty that a part of their workforce does not have modern communication tools; and educators cannot count on every student having high-speed access to learning materials on the web.

Cellular service in Vermont is also inadequate. We have approximately 85% coverage along our interstates and major highways like Routes 2, 4, 7, and 9, but several major and many minor gaps remain sufficient to disrupt the experience of users. Coverage in smaller communities and secondary highways is much less reliable. Lack of coverage is a serious issue for employers, residents, visitors, and colleges trying to recruit and retain students.

Development of mobile Internet access in Vermont is also lagging. Across the country and the world, there is a growing expectation of being able to open up a laptop nearly anywhere and connect through WIFI and cellular broadband services. In Vermont, true broadband speeds on cellular networks are limited to Chittenden County. While there are increasing numbers of WIFI hotspots, we have yet to make them a commonplace occurrence.

WHAT TECHNOLOGY WILL BE DEPLOYED?

There is no one single technological solution that will work in all parts of the state at all times to enable us to meet our goals. Therefore, the Authority will have the operational flexibility and mandate to use the technology that works best and provides the best return on investment.

The Authority and its partners will invest in the networks and financial models that provide Vermonters the services they need today and into the future. The Authority will invest in technology that are financially self-sustaining.

Nevertheless, two technologies – fiber optics and wireless – are the building blocks of any sort or long-term strategy to upgrade telecommunications networks. Fiber offers nearly limitless transmission capacity, can support nearly any imaginable communications service, and the fiber lines that serve users are assets with a long useful life. Wireless offers mobility, which no other technology does, and the ability to rapidly deploy new networks. The networks supported by the Authority will be a carefully selected mixture of fiber and wireless infrastructure that will blanket the entire state.

HOW WILL THE AUTHORITY WORK WITH OTHER EFFORTS TO BRING BROADBAND AND WIRELESS TO VERMONT?

The Authority will serve as a bridge between public sector efforts and private sector investments. It will invite those who are already working to develop infrastructure, such as the Vermont Broadband Council and the Northlink Project, to collaborate on leveraging planned investments to reach more people in a shorter period of time.

While the state's Vermont Broadband Grant and Connect Vermont programs have provided experience in the area of connectivity, they have also highlighted the challenges of a sporadic approach. The state has a responsibility to provide coverage to all regions and must now undertake a much broader strategy.

The Authority will work with the previously funded towns to ensure complete coverage and to spread those networks across larger regions. The Authority will also leverage loan dollars available through the Technology Infrastructure Fund of the Vermont Economic Development Authority.

HOW WILL THE AUTHORITY ACHIEVE NEEDED INVESTMENTS?

Attracting private investment is central to the development of broadband and wireless networks in Vermont. This private investment is necessary and desirable to the Authority. By asking private investors to put their own money at risk, we will benefit from the expertise of those who have an incentive to see financially sound, well-executed projects funded.

There are some parts of our rural communities in which investments in telecom infrastructure cannot produce a reasonable return on investment in any reasonable period of time. Therefore, the job of the state is to share in – but not eliminate – the financial risk of these projects, provide a longer-term investment horizon, and to support projects with enough scale and scope, such that the revenue from the project is sufficient to pay for itself over time.

HOW WILL PROJECTS BE FUNDED?

The state can provide the Authority with its moral obligation of up to \$40 million in bonds to back projects in the first year of construction and possibly more if needed and sustainable. The initial target is to leverage more than \$200 million in private sector investment with the state's backing. Repayment of borrowing for the projects will be based on revenues generated from leasing access to the infrastructure, such as fiber optic networks and space on towers, or the revenues from services provided over the network. The value of the assets controlled or created by the Authority will also help to secure the value of any bonds.

The Authority and other public sector partners would have the opportunity to further enhance the attractiveness of investments in infrastructure through federal funding or creative financing. For example, any portion of the networks that could be paid for directly through a federal appropriation would reduce the amount of capital required without reducing revenues, thereby lowering the risk involved in the project. In a

different kind of incentive, some private investment could be structured so that it flows through limited-obligation municipal indebtedness and gains the advantages of that investment.

The Authority will work with the Vermont Economic Development Authority, the Vermont State Treasurer and the Vermont Municipal Bond Bank to develop alternative financing solutions for the networks.

HOW WILL WE WORK WITH SERVICE PROVIDERS?

The Authority will seek to complement – not replace – the role of service providers and infrastructure developers in building infrastructure and delivering service to Vermont.

The Authority will build networks and infrastructure that have long-term commitments from service providers to provide service to Vermonters. This is critical to the financial viability and sustainability of this effort. We will provide equitable opportunities to multiple service providers to use the infrastructure and networks built with the Authority's involvement.

The Authority will negotiate with those entities that already own networks and infrastructure to utilize those assets on a favorable commercial basis. We will contract with companies that have specific expertise, such as tower development, management, and marketing. The Authority is essentially a facilitator of infrastructure development that will attract private investment, providing opportunities for a spectrum of carriers, wired and wireless.

The ability of the Authority to create enabling infrastructure will also dramatically improve the business model for companies looking to deploy infrastructure services. For example, if the Authority is able to develop networks of modest towers that fill in coverage gaps, wireless service providers will not have to worry about the expensive and lengthy tower permitting process and will benefit from robust backhaul capacity provided through the Authority.

HOW WILL WE ACHIEVE SUSTAINABILITY?

Ultimately, the users of telecommunications services in Vermont, taken as a whole, can pay for the development of broadband and wireless networks through the fees that they pay to use the services on the network. Our job, then, is to facilitate the financing and development of these networks, and to insist that they cover all of Vermont, and not only parts. As the Authority will mitigate the risk of the projects, it would share in a revenue stream that the Authority will be able to repay bonded debt and reinvest in building future capacity and deploying the latest technology.

HOW WILL THE AUTHORITY BE STRUCTURED AND ORGANIZED?

The Authority would be a corporation chartered by the state and governed by a Board of Directors.

The Authority would have up to four staff members, including an Executive Director, a Financial Director, a Technology Advisor/Network Planner, and a Grant Writer/Administrator.

The State would provide an appropriation to seed the organization for the first year of operations.

HOW WILL WE PROVIDE SUPPORT FOR OUR GOALS WITH OTHER ACTIONS?

The effort to expand the availability of mobile broadband will piggyback on the effort to expand broadband to all of Vermont's homes and businesses. A small portion of the Authority's appropriation will be dedicated to a modest grant and incentive program (\$200,000 over two years) to encourage users (like town offices, downtown and village businesses and residential users) to share broadband connections through WIFI. There will be a focus on getting at least one highly visible WIFI hotspot in every city, village, and town in the state.

While the Authority is the centerpiece of our broadband and wireless strategies, there are a number of additional steps we should take to support the work of the Authority and others who are working to expand broadband and wireless infrastructure in the state.

Wireless Permitting. It is important to reduce the amount of time and review required for lower-impact wireless facilities in wireless permitting processes at the state and local level. Specific actions include:

- Create a minor permit process for municipalities to use that will result in a streamlined local permitting review of small wireless communications facilities.
- Exempt homeowners from the need for wireless permits to attach small antennas to their homes for distributing wireless broadband services.
- Reduce the Act 250 jurisdiction over structures used for wireless communications facilities if they are not taller than the height of a common utility pole.
- Create a single, state-level permit process at the PSB for coordinated proposals to build five or more towers located in more than one Act 250 district, in place of local zoning and Act 250.
- Direct the PSB to create a streamlined process for permitting wireless communications attachments to electric transmission and generation towers via the sec. 248 process.

Utility Pole and Transportation Rights-of-Way Access. We can take additional steps to more effectively leverage government and public utility assets like poles and rights-of-way.

- Ensure that all broadband and wireless providers have the rights to attach to utility poles on terms established by the PSB.
- Establish a published policy for access to state-owned road and rail rights-of-way (ROWs) by all categories of broadband and wireless service providers which recognize the value of developing these services.

Investigate Electric Utility Involvement in Broadband Development. Ask the PSB to conduct an investigation regarding the establishment of regulatory policy that will encourage utilities to make responsible investments in fiber optic, wireless, or powerline broadband facilities and related services that help bring broadband and wireless to unserved or underserved areas.

SUMMARY

While we have made noticeable progress on the Governor's telecommunications goals in the last three years, the pace of technology advances and compelling imperative to remain ahead of this curve require a bold initiative. We must make Vermont a leader in telecommunications technology, for our children, our businesses and our communities.

The Vermont Telecommunications Authority will provide a vehicle to put Vermont in technology's fast lane. The Authority will blend the private and public sector opportunities, to create a cutting edge network that will establish Vermont as an incubator for the entrepreneurs of today and for years to come. We look forward to working with our partners throughout Vermont and the nation, to make this endeavor a resounding success.

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